

Unit Planning Guide: Grade __4_ Unit __5_ of _8__

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| Unit Title: Addition and Subtraction of Fractions Multiplication of fractions | Pacing (Duration of Unit): 5 Weeks |
| Grade: 4 | Buffer Day(s): |

Desired Results

Transfer Goals

Students will be able to independently use their learning to:

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- **Model with mathematics.**
- **Use appropriate tools strategically.**
- **Attend to precision.**
- **Look for and make use of structure.**
- Look for and express regularity in repeated reasoning.

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Standards (Priority Standards in bold):

- **4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.**
- a. Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.*
- b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)*
- c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will*

WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting

Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need:
1.) this curriculum map, 2.) a list of their

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| <p><i>be needed? Between what two whole numbers does your answer lie?</i></p> <ul style="list-style-type: none"> • 4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.<i>For example, express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.</i> • 4.NF.6 Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i> • 4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model. | <p>ELLs and their proficiency levels, and 3.) appropriate language function expectations and scaffolds or supports.</p> |
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| <p align="center">Meaning (*Mostly assessed through Performance Tasks/Assessments)</p> |
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| <p>Big Ideas: (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)</p> <ul style="list-style-type: none"> • Fractions can be expressed as decimals. • Decimals can be represented visually and in written form. • Comparisons of two decimals are only valid when they both refer to the same whole. • Multiplying fractions is similar to dividing whole numbers. | <p>Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> • How are fractions and decimals related? • How can I use models to compare fractions? • What patterns do you notice when multiplying fractions? |
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| <p align="center">Acquisition (*Mostly assessed through traditional summative assessments)</p> |
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Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

Students will know ...

- decimal place value to the hundredths place.
- multiples of fractions are generated by multiplying whole numbers by unit fractions.
- fractions can be expressed as a decimal.

Key Academic Vocabulary:

- Decimal
- Decimal Point
- Tenths
- Hundredths
- Increment

Skills: The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)

Students will be skilled at:

- multiplying fractions by whole numbers. (remembering)
- locating decimals on a number line. (understanding)
- comparing decimals to hundredths. (analyzing)
- explaining reasons for decimal comparisons and express their relationship using the symbols $>$ $<$ $=$. (evaluating)
- solving real world problems (applying)